# Manor Hall Academy



## DESIGN & TECHNOLOGY POLICY and Review

# CICELY HAUGHTON SCHOOL

**Building Relationships** 

Celebrating Success

Promoting Change

Author: Mr D Bentley

This Policy was amended Spring 2024
and will be reviewed Spring 2025

## **Amendments**

#### Introduction

THIS DOCUMENT IS a statement of the aims, principles and strategies for teaching and learning of Design and Technology at Cicely Haughton School.

A. What is Design and Technology (D&T)?

## <u>D&T National Curriculum requirements</u>, obligations and entitlements:

National Curriculum requirements: D&T is a compulsory foundation subject to be provided for KS 1&2. Whereas Academies do not have to follow the NC they have to teach a broad and balanced curriculum. Here at Manor Hall Academy Trust we are committed to providing Design & Technology.

## Purpose of study

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

### **Aims**

The national curriculum for design and technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook.

At Cicely Haughton we strive to provide a program of learning opportunities for all pupils to gain the basic knowledge and understanding, which underpin design and technology. In addition, we endeavour to provide continuity and progression for all pupils throughout the curriculum as they move through the school. We aim to ensure health and safety of all pupils during design and technology activities.

## Key Stage 1

When designing and making, pupils should be taught to:

- Design purposeful, functional, appealing products for themselves and other users based on design criteria
- Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology
- Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
- Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics
- Explore and evaluate a range of existing products
- Evaluate their ideas and products against design criteria
- Build structures, exploring how they can be made stronger, stiffer and more stable
- Explore and use mechanisms [for example, levers, sliders, wheels and axels], in their products

## Key stage 2

When designing and making, pupils should be taught to:

- Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
- Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design
- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
- Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities
- Investigate and analyse a range of existing products

- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- Understand how key events and individuals in design and technology have helped shape the world
- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] Taught through science and reinforced knowledge in DT projects, including LKS2 Battery operated light (Twinkl)
- apply their understanding of computing to program, monitor and control their products

## Cooking and nutrition

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Growing their own ingredients and understanding about seasonality helps children to appreciate where their food comes from and the importance of fresh and seasonal ingredients and an understanding of "food miles". We are fortunate to have access to the walled garden and are developing our own veg beds. This has already had an impact on children's willingness to try new things.

Pupils should be taught to:

## Key stage 1

- use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from.

## Key stage 2

- understand and apply the principles of a healthy and varied diet
- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

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How Design and Technology links to the whole School Intentions

# **Our Intentions**

## **Pupils leave with:**

- with improved positive physical and mental health
- with life skills enabling them to access the world around them
- as enriched individuals
- with improved self-regulation
- with improved independence
- as responsible and respectful citizens

Intent				
How is our school's <b>intent</b> represented throughout the curriculum for this subject?	With improved positive and physical and mental health  We aim to: support children's understanding of healthy foods to support physical health and mental health  With life skills enabling them to access the world around them  We aim to: develop their personal cooking skills and preparation of food, healthy food choices, develop skills to design, build and make which could be a career path for some children  As enriched individuals  We aim to: allow the children to work with food, tools, woodwork and textiles enabling them to feel pride with finished pieces of work/food – develop skills to work with food and designing  With improved self-regulation  We aim to: allow children to use trial and error to create a final piece of work/food and understand that not everything turns out how we envisage it but that's ok, learning to work with a range of materials they may not be confident with With improved independence  We aim to: enable children to explore foods/woodwork/tools/textiles independently and create final pieces with growing independence  As responsible and respectful citizens			
	We aim to: enable children to explore a range of foods from differing cultures/countered encouraging them to be respectful of choices made by others. Enable children to explore a range of tools, respecting their purpose and use. Respecting work produced by others.			

## Strategies for the Teaching of the Design and Technology Curriculum

- THE Design and Technology CURRICULUM IS ORGANISED through the Twinkl scheme of work. (Adapted to the needs of our children and resources/time implications)
- A variety of teaching strategies is used to ensure a flexibility of approach can be maintained.
- The delivery of schemes relies primarily upon thinking skills, speaking and listening skills and fact acquisition.
- Discussion is encouraged as is the acquisition of appropriate Design and Technology vocabulary.
- All teaching is done by the Design and Technology teacher and class Teaching Assistant/s.
- Pupils with learning difficulties receive extra support in the classroom from Teaching Assistant when appropriate:

In the preparation of Design and Technology lessons attention is given to differentiation and the matching of teaching and learning strategies to enable all pupils to participate fully and achieve success

- EXCELLENCE IN DESIGN AND TECHNOLOGY IS CELEBRATED in display and performance, including:
- Praise and commendation from individual staff and peers
- Work is displayed in class and throughout the school

## How is the Design and Technology Curriculum Implemented?

Implementation				
How is the subject timetabled? How do we know this happens?	A 40/50 minute session weekly, alternate half terms, is timetables with the DT teacher.			
How is the subject mapped out? How are we ensuring coverage?				
Can we see progression across the school within pupils' books?				
How is assessment used to impact learning? How do we know it is accurate?				

How confident are staff with the
subject? How do we know?

AST is very confident with DT, she has a great relationship with all the children and is able to produce fantastic work and food with the children.

## Strategies for Ensuring Progress and Continuity

- PLANNING IN Design and technology is from Twinkl adapted to high quality resources and meets the needs of National Curriculum.
- THE ROLE OF THE Design and Technology CO-ORDINATOR is to:
- Direct policy development and produce schemes of work designed to ensure breadth of study in line with requirements of National Curriculum.
- Monitor progress in Design and Technology and advise teachers on action needed.
- Take responsibility for the purchase and organisation of central resources for Design and Technology.
- Keep up-to-date with developments in Design and Technology education and disseminate information to colleagues, as appropriate.
- FEEDBACK TO PUPILS about their own progress in Design and Technology is achieved through the marking of work.

## Health & Safety:

Design and Technology is essentially a practical subject

ALL those involved in Design and Technology MUST be safe (in terms of):

- Safeguarding and protection
- General welfare
- H&S procedures in D&T

Tasks, materials and processes are risk assessed according to school policies and CLEAPPS

## **Equal Opportunities and Special Needs:**

Design and Technology is for ALL children at Cicely Haughton School

Staff will work closely with individual children, encouraging, modelling, assisting their development of skills, achieving the task etc. Whilst staff will not do the work for the children there is always a delicate balance of when to step in and assist those children who are trying but for whatever reason not succeeding in the task.

## Effective marking

- Aims to help children learn, not to find fault, and comments aim to be positive and constructive.
- Is often done while a task is being carried out through discussion between child and teacher
- FORMATIVE ASSESSMENT is used to guide the progress of individual pupils in Design and Technology. It involves identifying each child's progress in each aspect of the subject, determining what each child has learned and what therefore should be the next stage in his learning. Formative assessment is mostly carried out informally by teachers in the course of their teaching.

## Suitable tasks for assessment and future discussion will include:

- Small group discussions perhaps in the context of a practical task.
- Specific assignments for individual pupils (written/spoken/pictorial).
- Individual discussions in which children are encouraged to appraise their own work and progress; this may be done in groups or pairs when collective tasks have been undertaken.

## Strategies for Recording and Reporting

- RECORDS OF PROGRESS IN DESIGN AND TECHNOLOGY kept for each child will contain
- A Design and Technology section in the children's topic folders, dated and annotated with teacher comments and containing the terms work which shows achievement and progress.
- FORMATIVE ASSESSMENT is ongoing.
- RESOURCES IN Design and Technology are the responsibility of the Design and Technology Coordinator who controls an allocated budget.

The school has developed it's provision for the teaching of Design and Technology in our 'outbuildings' classroom. Please see specific policies relating to Health and Safety and Risk Management Plans.

## How do we measure the Impact of the Design and Technology Curriculum?

Impact				
Do all groups have equal access to the curriculum? How do we know?  All groups have access to same amount of time per term—I complete the timetable for the school DT slots				
How does varying staff confidence impact on the curriculum?  TA's support AST while she teaches DT – TA's support with the behaviour management as they are with the children.  AST delivers the session to the children.				

## Things to celebrate

- All staff want DT on the curriculum
- All staff understand the importance of children learning new skills especially the food technology side which has been missing during lessons
- Useable space to now use
- Children are engaging well with the DT curriculum

The school has achieved dyslexia friendly full status and as such will give due regard to dyslexia friendly strategies and objectives.

## **Progression of Skills**

	KS1	LKS2	UKS2
Design	KS1 Design and Technology National Curriculum  Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing.  They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment].  Children design purposeful, functional, appealing products for themselves and other users based on design criteria.  They generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.  Children can:  a use their knowledge of existing products and their own experience to help generate their ideas;  b design products that have a purpose and are aimed at an intended user;  c explain how their products will look and work through talking and simple annotated drawings;  d design models using simple computing software; e plan and test ideas using templates and mock-ups; f understand and follow simple design criteria;  g work in a range of relevant contexts, for example imaginary, story-based, home, school and the wider environment.	KS2 Design and Technology National Curriculum  Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing.  They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].  Children use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.  They generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design.  Children can:  a identify the design features of their products that will appeal to intended customers;  b use their knowledge of a broad range of existing products to help generate their ideas;  c design innovative and appealing products that have a clear purpose and are aimed at a specific user;  d explain how particular parts of their products work;  e use annotated sketches and cross-sectional drawings to develop and communicate their ideas;	KS2 Design and Technology National Curriculum  Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing.  They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].  Children use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.  They generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design.  Children can:  a use research to inform and develop detailed design criteria to inform the design of innovative, functional and appealing products that are fit for purpose and aimed at a target market;  b use their knowledge of a broad range of existing products to help generate their ideas;  c design products that have a clear purpose and indicate the design features of their products that will appeal to the intended user;  d explain how particular parts of their products work;  e use annotated sketches, cross-sectional drawings and exploded diagrams (possibly including computer-aided
Design	talking and simple annotated drawings;  d design models using simple computing software; e plan and test ideas using templates and mock-ups; f understand and follow simple design criteria;  g work in a range of relevant contexts, for example imaginary, story-based, home, school and the wider	help generate their ideas;  c design innovative and appealing products that have a clear purpose and are aimed at a specific user;  d explain how particular parts of their products work;  e use annotated sketches and cross-sectional drawings to develop and communicate their ideas;	b use their knowledge of a broad range of existing products to help generate their ideas; c design products that have a clear purpose and indicate the design features of their products that will appeal to the intended user; d explain how particular parts of their products work; e use annotated sketches, cross-sectional drawings and exploded diagrams (possibly including computer-aided design) to develop and communicate their ideas; f generate a range of design ideas and clearly communicate final designs; g consider the availability and costings of resources when planning out designs; h work in a broad range of relevant contexts, for example conservation, the home, school, leisure, culture, enterprise, industry and the wider environment.

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of making.

Children select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing].

They select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.

#### Children can:

#### Planning

- a with support, follow a simple plan or recipe;
- b begin to select from a range of hand tools and equipment, such as scissors, graters, zesters, safe knives, juicer;
- select from a range of materials, textiles and components according to their characteristics;

#### Practical skills and techniques

- d learn to use hand tools and kitchen equipment safely and appropriately and learn to follow hygiene procedures;
- e use a range of materials and components, including textiles and food ingredients;
- f with help, measure and mark out;
- cut, shape and score materials with some accuracy;
- h assemble, join and combine materials, components or ingredients:
- demonstrate how to cut, shape and join fabric to make a simple product;
- j manipulate fabrics in simple ways to create the desired effect;
- k use a basic running stich;
- cut, peel and grate ingredients, including measuring and weighing ingredients using measuring cups;
- m begin to use simple finishing techniques to improve the appearance of their product, such as adding simple decorations.

#### KS2 Design and Technology National Curriculum

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of making.

Children select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] accurately.

They select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.

#### Children can:

#### Plan

- with growing confidence, carefully select from a range of tools and equipment, explaining their choices;
- b select from a range of materials and components according to their functional properties and aesthetic qualities:
- place the main stages of making in a systematic order;

#### Practical skills and techniques

- d learn to use a range of tools and equipment safely, appropriately and accurately and learn to follow hygiene procedures;
- use a wider range of materials and components, including construction materials and kits, textiles and mechanical and electrical components;
- with growing independence, measure and mark out to the nearest cm and millimetre;
- cut, shape and score materials with some degree of accuracy;
- assemble, join and combine material and components with some degree of accuracy:
- demonstrate how to measure, cut, shape and join fabric with some accuracy to make a simple product;
- j join textiles with an appropriate sewing technique;
- begin to select and use different and appropriate finishing techniques to improve the appearance of a product such as hemming, tie-dye, fabric paints and digital graphics.

#### KS2 Design and Technology National Curriculum

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of making.

Children select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.

They select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.

#### Children can:

#### Planning

- independently plan by suggesting what to do next;
- b with growing confidence, select from a wide range of tools and equipment, explaining their choices;
- select from a range of materials and components according to their functional properties and aesthetic qualities;
- d create step-by-step plans as a guide to making;

#### Practical skills and techniques

- e learn to use a range of tools and equipment safely and appropriately and learn to follow hygiene procedures;
- independently take exact measurements and mark out, to within 1 millimetre:
- use a full range of materials and components, including construction materials and kits, textiles, and mechanical components;
- cut a range of materials with precision and accuracy;
- i shape and score materials with precision and accuracy;
- assemble, join and combine materials and components with accuracy;
- demonstrate how to measure, make a seam allowance, tape, pin, cut, shape and join fabric with precision to make a more complex product;
- l join textiles using a greater variety of stitches, such as backstitch, whip stitch, blanket stitch;
- refine the finish using techniques to improve the appearance of their product, such as sanding or a more precise scissor cut after roughly cutting out a shape.

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making.

Children explore and evaluate a range of existing products. They evaluate their ideas and products against design criteria. Children can:

- explore and evaluate existing products mainly through discussions, comparisons and simple written evaluations;
- explain positives and things to improve for existing products;
- explore what materials products are made from;
- d talk about their design ideas and what they are making;
- as they work, start to identify strengths and possible changes they might make to refine their existing design;
- f evaluate their products and ideas against their simple design criteria;
- g start to understand that the iterative process sometimes involves repeating different stages of the process.

KS2 Design and Technology National Curriculum

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making.

Children investigate and analyse a range of existing products. They evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. They understand how key events and individuals in design and technology have helped shape the world.

#### Children can:

- explore and evaluate existing products, explaining the purpose of the product and whether it is designed well to meet the intended purpose;
- b explore what materials/ingredients products are made from and suggest reasons for this;
- c consider their design criteria as they make progress and are willing to alter their plans, sometimes considering the views of others if this helps them to improve their product;
- d evaluate their product against their original design criteria;
- e evaluate the key events, including technological developments, and designs of individuals in design and technology that have helped shape the world.

KS2 Design and Technology National Curriculum

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making.

Children investigate and analyse a range of existing products. They evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. They understand how key events and individuals in design and technology have helped shape the world.

#### Children can:

- complete detailed competitor analysis of other products on the market;
- critically evaluate the quality of design, manufacture and fitness for purpose of products as they design and make;
- evaluate their ideas and products against the original design criteria, making changes as needed.

Children build structures, exploring how they can be made stronger, stiffer and more stable.

They explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

#### Children can:

- build simple structures, exploring how they can be made stronger, stiffer and more stable;
- b talk about and start to understand the simple working characteristics of materials and components;
- explore and create products using mechanisms, such as levers, sliders and wheels.

#### KS2 Design and Technology National Curriculum

Children apply their understanding of how to strengthen, stiffen and reinforce more complex structures.

They understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages].

They understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors].

They apply their understanding of computing to program, monitor and control their products.

#### Children can:

- understand that materials have both functional properties and aesthetic qualities;
- apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products;
- understand and demonstrate how mechanical and electrical systems have an input and output process;
- make and represent simple electrical circuits, such as a series and parallel, and components to create functional products;
- e explain how mechanical systems such as levers and linkages create movement;
- f use mechanical systems in their products.

#### KS2 Design and Technology National Curriculum

Children apply their understanding of how to strengthen, stiffen and reinforce more complex structures.

They understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages].

They understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors].

They apply their understanding of computing to program, monitor and control their products.

#### Children can:

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures in order to create more useful characteristics of products;
- b understand and demonstrate that mechanical and electrical systems have an input, process and output;
- explain how mechanical systems, such as cams, create movement and use mechanical systems in their products;
- d apply their understanding of computing to program, monitor and control a product.

Children use the basic principles of a healthy and varied diet to prepare dishes.

They understand where food comes from.

#### Children can:

- a explain where in the world different foods originate from;
- b understand that all food comes from plants or animals;
- understand that food has to be farmed, grown elsewhere (e.g. home) or caught;
- d name and sort foods into the five groups in the Eatwell Guide:
- understand that everyone should eat at least five portions of fruit and vegetables every day and start to explain why;
- f use what they know about the Eatwell Guide to design and prepare dishes.

#### KS2 Design and Technology National Curriculum

Children understand and apply the principles of a healthy and varied diet.

They prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.

They understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

#### Children can:

- a start to know when, where and how food is grown (such as herbs, tomatoes and strawberries) in the UK, Europe and the wider world;
- b understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically;
- c with support, use a heat source to cook ingredients showing awareness of the need to control the temperature of the hob and/or oven:
- d use a range of techniques such as mashing, whisking, crushing, grating, cutting, kneading and baking;
- explain that a healthy diet is made up of a variety and balance of different food and drink, as represented in the Eatwell Guide and be able to apply these principles when planning and cooking dishes;
- f understand that to be active and healthy, nutritious food and drink are needed to provide energy for the body;
- g prepare ingredients using appropriate cooking utensils;
- h measure and weigh ingredients to the nearest gram and millilitre:
- i start to independently follow a recipe;
- i start to understand seasonality.

#### KS2 Design and Technology National Curriculum

Children understand and apply the principles of a healthy and varied diet.

They prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.

They understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

#### Children can:

- a know, explain and give examples of food that is grown (such as pears, wheat and potatoes), reared (such as poultry and cattle) and caught (such as fish) in the UK, Europe and the wider world:
- understand about seasonality, how this may affect the food availability and plan recipes according to seasonality;
- understand that food is processed into ingredients that can be eaten or used in cooking;
- d demonstrate how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source;
- e demonstrate how to use a range of cooking techniques, such as griddling, grilling, frying and boiling;
- explain that foods contain different substances, such as protein, that are needed for health and be able to apply these principles when planning and preparing dishes;
- adapt and refine recipes by adding or substituting one or more ingredients to change the appearance, taste, texture and aroma;
- alter methods, cooking times and/or temperatures;
- measure accurately and calculate ratios of ingredients to scale up or down from a recipe;
- independently follow a recipe.